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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,004	04/13/2004	Takao Myono	14699-019001 / F1030822US	4693
26211	7590	08/31/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			TRA, ANH QUAN	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

HA

Office Action Summary	Application No.	Applicant(s)	
	10/823,004	MYONO ET AL.	
	Examiner	Art Unit	
	Quan Tra	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/02/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakagawa et al. (US 2003/0151449).

As to claim 1, Nakagawa et al.'s figures 10 and 11 show a charge pump circuit comprising: a plurality of charge transfer transistors (Q1-Qn) connected in series; a plurality of capacitors (C1-Cn) each having one end connected to a corresponding connecting point of the charge transfer transistors; a first clock driver (Q25, Q22, Q23, Q26 in figure 11) for supplying clock pulses to the other end of the capacitor; a second clock driver (Q21-24 in figure 11) for supplying clock pulses to the other end of the capacitor and having higher driving capacity than the first clock driver; and a clock driver control circuit (circuit, not shown, that generating signal St and circuits CG and TD) for initiating operation of the first clock driver when the charge pump circuit starts operating and initiating operation of the second clock driver after a predetermined elapsed time (τ), wherein an output voltage is obtained from one of the plurality of charge transfer transistors.

As to claim 2, figures 10 and 11 show that the clock driver control circuit stops operation of the first clock driver at an end of the predetermined elapsed time.

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As to claim 3, figure 15 shows a similar circuit with a clock driver control circuit comprises a comparator (OP1) which compares a voltage corresponding to the output voltage with a predetermined reference voltage and a control circuit (NOT3 in figure 11) which controls the first clock driver and the second clock driver according to an output signal of the comparator.

As to claim 4, figure 15 shows that the predetermined reference voltage is equal to a power supply voltage.

As to claim 6, figure 15 shows that the voltage corresponding to the output voltage is obtained by dividing the output voltage by resistors (R3, R4).

As to claim 7, figures 10 and 11 show that the clock driver control circuit comprises a counter which counts the clock pulses (paragraph [0133] teaches that circuit TD counts a predetermined time τ) and a control circuit (NOT3 in figure 11) which controls the first clock driver and the second clock driver according to an output signal of the counter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 2003/0151449) in view of Mefford (USP 4418332).

Nakagawa et al.'s figures 10, 11 and 15 show all limitations of the claim except for that the comparator circuit is hysteresis comparator. However, Mefford teaches in column 1, lines 51-55, that hysteresis comparator has the advantage of reducing switching noise. Therefore, it

would have been obvious to one having ordinary skill in the art to use hysteresis comparator for Nakagawa et al.'s comparator OP1 for the purpose of reducing noise.

5. Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 2003/0151449).

The modified Nakagawa et al.'s figures 10, 11, and 15 shows all limitations of the claims except for plurality of charge pump circuits responsive to the driver control circuit. However, duplicating the number of charge pump circuits is well known in the art in order to generate plurality of boosted voltages. Therefore, it would have been obvious to one having ordinary skill in the art to duplicate the number of charge pump circuit in figure 10 for the purpose of providing plurality of high supply voltages.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Quan Tra', with a long horizontal flourish extending to the right.

Quan Tra
Primary Examiner
Art Unit 2816

August 30, 2005